ABSTRACT OF THE DISCLOSURE

A method of producing green light signals couples pump signals from at least one pump source into at least one erbium doped fiber (EDF) to cause ground state absorption (GSA) and excited state absorption (ESA) in erbium ions of the EDF, which produces green light signals. The majority of the pump signals have a wavelength at which the probability of occurrence of ESA in the EDF is greater than the probability of occurrence of GSA in the EDF. The majority of the pump signals may have a wavelength in the range approximately 920nm to approximately 980nm, or in the region of 960nm. An erbium doped fiber amplifier (EDFA) for amplifying traffic-carrying signals may be pumped by green light signals produced by this method. A laser which produces green light signals may be constructed, which comprises at least one EDF, coupled to at least one pump source to receive pump signals therefrom, which cause GSA, and ESA in erbium ions of the EDF, which produces green light signals, the majority of the pump signals having a wavelength at which the probability of occurrence of ESA in the EDF is greater than the probability of occurrence of GSA in the EDF.